

A STATISTICAL STUDY OF THE EDUCATIONAL OPPORTUNITIES OFFERED IN THE MASSACHUSETTS TRAINING-SCHOOL FOR NURSES *

By RICHARD C. CABOT, M.D.

1. WHAT is the amount and variety of clinical material available for study in or outside of the hospitals connected with the different schools?
2. What is the quality, quantity and system of the instruction offered?
3. What is the *personnel* of the teaching staff?

On the answers to these three questions should depend, I suppose, the choice made by a candidate who is seeking the best opportunities for training either as a nurse or as a physician. The third question I cannot attempt to answer, although it is perhaps the most important of the three. In seeking information about the other two questions, the material used by me has been:

- a. The reports of the various training-schools;
- b. The answers obtained by a circular of questions sent to the superintendents of these schools;
- c. Conversations with several superintendents.

The information thus collected is of course meagre and fragmentary. It gives us no basis for general comparison of the different training-schools, and hence I shall make no attempt to compare and rank the different schools, *except in certain particulars*, in regard to which statistical information is reasonably trustworthy.

THE AMOUNT OF AVAILABLE CLINICAL MATERIAL.

The number of patients seen by each pupil during a course of training depends on:

- a. The number of patients in the hospitals connected with the school during the pupil's term of study;
- b. The number of patients visited outside the hospital or in out-patient departments;
- c. The number of students in the school;
- d. The frequency of rotation from ward to ward or from district to district.

a. The first of these factors is often vaguely stated as the "*size of the hospital.*" But it is not the size of the buildings, nor the number of beds in them, that determines the magnitude of the work done or of the opportunities offered.

Some hospitals have many beds but few patients. Others with far fewer beds keep those beds full and by frequent changes offer to the student and to the community far greater usefulness than others of greater capacity (unused).

* Read at the third meeting of the New England Society for the Education of Nurses, December, 1905.

(A.) LARGE HOSPITALS, 600 OR MORE PATIENTS A YEAR.

NAME	Patients Annually	Nurses	Patients per Nurse	Beds	Monthly Allowance	Remarks
1 Boston City	13,005	149	88	935	\$40 00	
2 Massachusetts General, Boston	5,000	87	57	301	6.00	
3 Tewksbury	4,094	60	68	500	15.00	
4 Worcester City	4,058	70	57	235	6.00 to 8.00	1905
5 Massachusetts Homeopathic, Boston	3,720	70	53	234	9.00	
6 Carney, S. Boston	2,535	43	58	180	5.00	
7 Lynn	1,721	28	61	90	9.00 to 12 00	1905
8 Children's, Boston	1,505	43	35	100		
9 St. Vincent's, Worcester	1,093	22	49	80	8.00	
10 Memorial, Worcester	1,062	27	39	60		
11 New England, Boston	1,009	35	28	120		
12 St. Elizabeth's, Boston	931	33	28	81	7.00	
13 Newton	927	34	27	150	6.00	
14 Springfield	900	19	47	66	5.00 to 7.00	
15 Salem	827	22	39	102	8.00	
16 House of Mercy, Pittsfield	825	40	20	125	9.00	1905
17 Lowell	796	15	53	75	10.00 to 14.00	
18 St. Luke's, New Bedford	771	23	33	65	6 00	
19 Boston Lying-In	671	19	35	52	10.00 to 14.00	
20 Waltham	599	76	7	110		

(B.) SMALL HOSPITALS, LESS THAN 600 PATIENTS A YEAR.

NAME	Patients Annually	Nurses	Patients per Nurse	Beds	Monthly Allowance	Remarks
21 Holyoke	509	21	24	70	\$9.00	1905
22 Lawrence	500	22	22	75	8.00	
23 Frost, Chelsea	487	9	54	40	10.00	
24 Malden	485	16	30	72	8.00	
25 Clinton	483	15	32	30	7.00 to 12.00	
26 North Adams	476	14	34	50	6.00	1905
27 Brockton	470	14	33	54	10.00	1905
28 Somerville	456	18	25	40	9.00	
29 Framingham	455	38	12	35		1905
30 Baptist, Brookline	398	17	23	39	8.00	
31 Dickinson, Northampton	389	12	32	32	8.00	
32 Hale, Haverhill	377	12	31	35	5.00 to 9.00	
33 Union, Fall River	372	35	10	45	7.00 to 8.00	
34 Burbank, Fitchburg	369	15	34	50	6.00 to 10.00	
35 Faulkner, Jamaica Plain	368	11	33	30	10.50	1905
36 Morton, Taunton	312	9	34	25	10.00	
37 Free Hospital for Women, Brook- line	308	22	14	40	6.50	
38 Quincy	307	7	43	25	9.00	
39 Newburyport	307	9	34	24	9.00	
40 Rotch (Infants), Boston	297	6	49	24	?	
41 Beverly	284	8	35	25	8.00 to 12.00	
42 Franklin Co., Greenfield	260	9	28	25	8.64	
43 Gloucester	245	10	24	30	9.00 to 12.00	
44 Melrose	220	12	18	20	8.00 to 10.00	
45 Charity Club, Brookline	197	14	14	29	9.00	
46 Deaconess, Boston	195	12	16	14	7.29	
47 Natick	146	6	24	12	5.00 to 9.00	
48 Everett	116	10	11	15	10.00	

This is obvious in Table I, where I have arranged the principal hospitals of Massachusetts in the order of the magnitude of their work as estimated by the number of *patients per year* (the quality of work is of course not here considered). In this table it will be noticed that the number of beds is a very inaccurate measure of the amount of work accomplished in a hospital. Thus, for example, the Lynn Hospital, which is actually seventh in the list, would be thirteenth if we regarded the number of beds. The Waltham Hospital, which is twentieth in the list, would be tenth if we judged by the number of beds.

b. The number of patients and the variety of diseases studied by pupils outside the hospital or in out-patient departments has not been estimated here. It is an important factor in the training of nurses, but one in regard to which it is not yet easy to get reliable data from the printed reports of training-schools. We need to know more concisely (1) the number of patients per nurse seen outside the wards of the hospital; (2) the number of cases of each disease; and (3) the amount of teaching or supervision given the pupil in this work.

c. The number of patients seen by each nurse in the hospital wards depends on the number of nurses and the number of patients, provided the rate of rotation is the same. As the last factor seems (from what I learn from superintendents) to be approximately the same in most training-schools, we may estimate the amount of experience gained by each nurse *during a year* in the hospital by dividing the number of patients per year by the number of nurses. (See Table I, column 4.)

We must realize, however, that the number of years spent by the nurse in hospitals modifies the importance of this figure very much. Thus, the Boston City Hospital, with its three-year course, offers each pupil 88×3 or 264 patients for study, while the Frost Hospital at Chelsea, though offering 54 patients per year to each nurse, has but a two-year course or $54 \times 2 = 108$ patients per nurse.

In some of the training-schools the amount of hospital material is confessedly a minor item in the nurse's training. These schools rely largely on the training obtained outside the hospital, and hence are unwilling to be judged by the hospital experience alone. For example, in the Framingham School, with twelve patients yearly for each nurse, and in the Waltham Hospital with seven patients yearly for each nurse, the hospital training is hardly one-sixth as much as that obtained in any of the seven largest hospitals in this list. But this is made up for (in the opinion of those in charge of the smaller schools) by the large amount of instruction given the nurses in families outside the hospital.

I shall not undertake here to discuss the merits of this question,

but merely to state some of the data and some of the principles for their interpretation. It should be noted among other points that it is entirely possible (either for a medical student or a nurse) to have too much material for study,—*i.e.*, more than can be assimilated. Whether or not this is the case in any of the hospitals in my list I cannot attempt to say, but my impression is that a nurse can *observe* as many patients as she can adequately *care for*, and that if a nurse is not overworked she is probably not over-supplied with material for study.

The *variety* of diseases studied is an important factor regarding which these tables give little information, but it is obvious that in chronic hospitals like Long Island or Tewksbury, and in hospitals that do not admit men (*i.e.*, the New England Hospital, the Boston Children's Hospital, the Lying-in Hospital) only a part of the field of nursing is covered. For nurses who desire to study particularly one portion of the field of nursing, these schools are of value.

THE AMOUNT AND KIND OF INSTRUCTION GIVEN.

The figures collected in Table II. are as accurate as can be obtained at the present time, but I believe them nevertheless to be in many respects inaccurate because it is impossible to find out at present:

NAME	Years in Course	Total hours of stated teaching	Lectures	Recitations	Demonstrations	No. of Paid Teachers	Remarks
1 Framingham.....	3	1,610	250	210	1150	5	1905
2 Morton, Taunton.....	3	1,381	192	252	939	3	
3 Deaconess, Boston....	3	1,250	99	297	854	1	
4 Waltham.....	4	964	299	217	448	9	
5 Cambridge School of Nursing.....	4	767	453	80	234	4	
6 Children's, Boston.....	3	574	274	150	150	7	(Not including work given in preliminary course.)
7 Worcester City.....	3	544	59	110	80	?	
8 Boston City.....	3	502	35	323	*	5	Stated as for 1 year.
9 St. Vincent's Worcester	3	468	52	260	156	*	(Calculated as for 1 year, may be wrong.)
10 Massachusetts, General	3	414	234	120	60	7	
11 Carney, So. Boston....	3	400	40	125	140	2	
12 Memorial, Worcester...	3	378	80	298	?	4	
13 McLean Asylum Waverly.....	2½	355	137	90	128	12	(Eleven of the 12 paid teachers are officers of the hospital.)
14 Somerville.....	3	345	135	110	100	2	Stated as for 1 year.
15 Union, Fall River.....	2½	339	104	235	?	5	
16 Lynn.....	2	328	78	200	50	1	
17 New England Hospital, Boston.....	3	319	69	250	250	5	
18 Dickinson, Northampton	2½	288	70	170	42	2	
19 Gloucester.....	3	265	52	213	?	2	(Calculated as for one year.)
20 Adams' Nervine, Boston	2½	248	60	140	48	6	
21 Burbank, Fitchburg...	2½	247	100	147	?	*	Calculated for 1 year.
22 Tewksbury.....	3	243	32	32	32	*	
23 Brockton.....	2½	240	80	160	?	3	
24 Melrose.....	3	240	120	120	?	3	
25 St. Elizabeth's, Boston.	3	225	40	117	68	1	
26 St. Luke's, New Bedford	3	215	83	84	48	4	
27 Franklin Co., Greenfield	2	213	53	160	?	2	
28 Holyoke.....	3	205	45	160	?	1	
29 Homeopathic, Boston...	3	203	123	80	?	4	
30 Beverly.....	2½	187	?	?	?	2	(Course in process of reorganization.)
31 Clinton.....	3	186	110	52	24	1	
32 Springfield.....	3	182	52	104	26	2	(Calculated as for one year.)
33 Natick.....	3	179	55	92	32	4	
34 Lawrence.....	3	176	48	128	?	3	
35 Salem..... 2 years, 7mo.	7mo.	172	50	122	?	*	
36 Newton.....	3	166	70	80	16	4	
37 Malden.....	3	156	52	52	52	1	Calculated for 1 year.
38 Mercy, Pittsfield.....	3	156	52	52	52	2	One year.
39 North Adams.....	3	144	64	68	12	2	
40 Baptist, Brookline....	2½	118	48	40	30	4	
41 Charity Club, Brookline	2	98	24	74	74	2	
42 Frost, Chelsea.....	2	97	57	40	?	1	
43 Lying-In, Boston.....	8mo.	97	45	52	52	1	
44 Faulkner, Jamaica Plain	3	78	46	32		*	
45 Free Hospital for Women, Brookline...	4½mo.	72	18	18	36	?	
46 Rotch, Boston.....	4mo.	48	32	16		?	
47 Everett.....	2½mo.	40	40	?	?	2	
48 Quincy.....	2	38	38	?	?	2	
49 Hale, Haverhill.....	2	32	32	?	?	2	
50 Lowell.....	2	?	35	?	?	3	

* Numerous. † Numerous; not calculable. ‡ Numerous; not calculated. § Not estimated.

This table included three schools not in Table I, viz.: The Cambridge Training School, the McLean Asylum and the Adams' Nervine.

a. What is the amount of teaching given by personal demonstrations in the wards?

b. What is the difference between first year lectures, second year lectures and third year lectures,—i.e., do the nurses (some or all) hear the same lectures over again? The same question also arose concerning the other form of instructions.

I would earnestly request the superintendents of training-schools to give their attention to making these points clearer in their annual reports. Many of the schools do not get credit for the most important part of the work done by them, viz., the personal instruction of nurses in the wards by the superintendent or her assistants. The number of lectures given is far less important, and far less valuable to the nurses. Yet this is stated very concisely in most reports, while the more valuable hours spent in training and teaching the pupils in the wards ("demonstrations") are not estimated. I realize that it is often difficult to make this estimate, but it is not, I think, impossible.

Recitations or "classes" with the superintendent should be clearly distinguished from demonstrations in the wards or in laboratories and kitchens, where the pupil does the work herself.

But the point on which I find it hardest to get information from the reports is this: *What is the number of different exercises attended by each pupil during the entire course?*

The relation between *what the school gives and what each pupil gets* is not clearly stated. Are the two identical? Seldom. First, because many exercises are given in sections and the total number of exercises is greater than the number attended by each pupil. Secondly, because the pupil may attend the same exercise in successive years. In the first case the school seems to give more exercises than each pupil actually gets. In the second, the pupil seems to get more different exercises than the school actually gives. These sources of doubt should be so far as possible eliminated.

On account of these difficulties of interpretation I am afraid that Table II may do injustice to several schools,—e.g., to the Boston City Hospital; St. Vincent's Hospital at Worcester; the Somerville, Gloucester, Beverly, Springfield and Malden Hospital training-schools, the Burbank Hospital at Fitchburg, and the Mercy Hospital at Pittsfield.

A further and more easily eliminated error is due to the fact that some schools include (rightly) the instruction given the nurse in her "preliminary" period, while other schools,—e.g., Worcester City Hospital Training-School, do not count this.

If now we look at Table II, making due allowance for the necessary

errors above alluded to, we note that as the figures stand we have three groups:

1. At the head of the list, a group of five "small"* training-schools which give a very large amount of instruction.

2. Next we find a group of (seven or eight) "large"* training-schools which give a medium amount of instruction—less than the "small" schools in the first group, more than the other "small" schools to be mentioned next.

3. Below these we find a much larger group of about 37 "small" schools giving a still smaller amount of instruction.

It appears then that while the "large" schools form a fairly compact and uniform group, offering approximately 350-550 hours of instruction, the "small" schools are divisible into two sub-groups. In the small schools we find both the largest and the smallest amount of stated teaching—1250 hours or more in 3, less than 300 in 33. Of these 33 schools, 20 give less than 200 hours, and one-half of these 20 give less than 100 hours' instruction.

These facts may be tabulated thus:

"Small" schools	750—1600 hours given in 5 schools or 10 per cent. of all.
"Large" schools	340—750 hours given in 10 schools or 20 per cent. of all.
"Small" schools	200—340 hours given in 14 schools or 30 per cent. of all.
	100—200 hours given in 11 schools or 20 per cent. of all.
	Less than 100 hours given in 10 schools or 20 per cent. of all.

We see further by the study of Table II that the amount of stated teaching is largest in those schools which offer the nurse the smallest number of hospital patients for study (Framingham, Waltham and the Deaconess Hospital in Boston). This is due, I take it, partly to the fact that the nurses have more leisure in these hospitals and partly to the belief of those in charge of them that 1000 hours or more of teaching is none too little in a three or four-year course.

It may also be noted in passing that as most medical schools offer 5000 to 6000 hours of teaching, we cannot find in these tables justification of the charge that our training-schools are trying to turn out physicians rather than nurses.

NUMBER OF PAID TEACHERS.

In the long run I believe that the most efficient schools will always be those having the largest number of paid teachers in relation to the

"Small" and "large" refer here to the size of the hospitals connected with the schools in question.

number of pupils. Unpaid teachers may do fine work for a time, but they can rarely be depended on. Hence I have attempted to tabulate as an important educational datum the number of professional teachers in each school.

The worth of the figures is impaired, first, by the excessive modesty of some superintendents, who do not count themselves at all and return the number of paid teachers in their school as *zero*; and secondly, by the fact that in the McLean Hospital Training-School and perhaps in some others it is difficult to say how many should be included in the term "paid teachers." Shall we include paid officers of the institution who occasionally teach? I should say not. Only those who give most of their time to teaching and are paid for it should be called "paid teachers."

THE FINANCIAL ASPECTS OF NURSES' TRAINING.

Some aspects of this important matter are dealt with in Tables I and III.

In Table I, column 6, we see that 43 out of the 48 schools make a small monthly allowance to cover the expenses of uniform, text-books, etc. This allowance is almost identical in all schools of this table, varying only between \$5 and \$15 a month, while in most of the schools it is approximately \$8 a month. This allowance is strikingly smaller than it was fifteen years ago.

In some schools (*e.g.*, at Framingham) the nurses are given their outfit instead of an allowance, which amounts, I am told, to nearly the same thing.

Three schools, the Cambridge School, the Children's Hospital School and the Waltham School, charge their nurses something for training:

Children's Hospital	\$100 (entrance fee).
Waltham Training-School	\$250 (for whole course).
Cambridge Training-School	?

Scholarships and the alternative of paying by extra service instead of in money lighten the burden of these fees very considerably.

One school—the Massachusetts General Hospital Training-School—has tried charging tuition fees and abandoned it.

MONEY EARNED BY NURSES IN TRAINING.

Table III shows the amount earned by the nurses of eighteen schools. The source of these earnings and their disposition is not clearly

explained in most reports. Sometimes the nurses' earnings go to support the hospital, sometimes to support the school. Sometimes (as in Waltham) the hospital pays the training-school for the services of the nurses and thus helps to support the school. Sometimes the money is earned by service in other hospitals (as during the service of the nurses from several schools in the Corey Hill Hospital) and paid to the schools.

In most cases, however, the money is earned by service in private families, a custom which seems to have grown to be an important part of the service of a hospital situated in a small town, where graduate nurses are few.

TABLE III.

SCHOOLS WHICH EARN MONEY BY SENDING OUT PUPIL-NURSES
AND THE AMOUNT EARNED.

1 Waltham.....	\$12,845.36	11 Natick.....	\$710.00
2 Mercy, Pittsfield.....	7,797.00	12 Gloucester.....	698.91
3 Union, Fall River.....	6,663.44	13 Clinton.....	628.23
4 Brockton.....	5,777.00	14 Carney.....	325.00
5 Somerville.....	2,000.00	15 Franklin Co., Greenfield....	293.00
6 Everett.....	1,400.00	16 Baptist.....	182.93
7 Springfield.....	1,026.00	17 Deaconess.....	123.41
8 Newton.....	1,005.86	18 Burbank.....	92.33
9 Charity Club.....	791.07	19 Lawrence.....	Amount not stated.
10 Dickinson, Northampton.	740.00		

OBSTETRICS, COOKING AND MASSAGE.

The "enrichment of the curriculum" by the addition of special branches of instruction not formerly given in the training-schools has gone on very fast in the last ten years. At the present time all the schools in our tables teach cooking except the Tewksbury School, and all the general hospitals teach massage except seven. The schools at Chelsea, Everett, Haverhill, Lynne, Pittsfield (Mercy Hospital) and St. Vincent's at Worcester are still without this teaching.

Obstetrics is now part of the training of all the schools attached to general hospitals, except the Boston City Hospital, the Brockton, Quincy and Haverhill (Hale) hospitals. The last three teach it in theory only.

PRELIMINARY TRAINING.

Much of the training needed by nurses can be given outside of the hospital wards with benefit both to the nurse and to the patient, who thus escapes the ministrations of wholly untrained probationers. The

benefits of such preliminary training are obvious but expensive, since the nurse during this portion of her training renders no service to the hospital in which and by which she is usually supported.

It is doubtless for this reason that only the eleven schools mentioned in Table IV have yet established a preliminary or preparatory period in their course.

TABLE IV.

PRELIMINARY TRAINING.

Children's.....	4	Mos.	McLean.....	4	Mos.
City, Boston.....	4	"	Memorial, Worcester.....	6	"
Everett.....	6	"	Union, Fall River.....	5	"
Faulkner.....	1	"	Waltham.....	12	"
Framingham.....	6	"	Worcester City.....	4	"
Massachusetts General.....	4	"			

EXCHANGE OF NURSES BY DIFFERENT SCHOOLS.

The movement of nurses from one hospital to another in order to supplement the imperfect training to be had in any single institution is one which must be greeted with joy by anyone who sees the obvious need of the different hospitals for each other. There are now 17 schools or about one-third of all the Massachusetts schools which send their nurses to other schools or which receive them from other schools as a portion of their training. (See Table V.) It is greatly to be hoped that this movement will increase rapidly within the next ten years. It is only in this way that the fifty odd training-schools contained within the limits of Massachusetts can justify their separate existence. Whenever a school allows its pupils to take a part of their training in another school, the two schools lose to that extent their separate existence, which is exactly what is needed. It is only in the large schools that a nurse can get a sufficient variety of experience with the diseases which she will be called upon after graduation to nurse. It is (so far) only in the smaller schools that a nurse learns to devote all her time profitably to one patient, as she must do in private nursing. Both these disciplines—that of the large and that of the small hospital—are necessary for the equipment of a well-trained private nurse. Neither has a monopoly of advantages. In so far as they can be combined by the exchange of pupils, a great good will be gained for the nurses and for the community.

TABLE V.

HOSPITALS SENDING PUPILS TO OR RECEIVING THEM FROM
OTHER HOSPITALS.

Adams' Nervine.	Gloucester.	Newton.
Baptist.	Hale, Haverhill.	St. Vincent's, Worcester.
Carney.	Lying-In, Boston.	Union, Fall River.
Children's.	Massachusetts, General.	Waltham.
Deaconess.	Morton, Taunton,	Worcester City.
Framingham.	Natick.	

SUMMARY AND CONCLUSIONS.

1. In seven hospitals each admitting over 1700 patients a year the number of *patients per nurse* per year is from 50 to 90, averaging 63.

2. In 25 hospitals admitting from 350 to 1500 patients per year the patients per nurse per year range from 20 to 54, averaging 33. Only 3 hospitals fall below 20.

3. In the remaining hospitals admitting 116 to 312 patients a year the nurses see about 27 patients per year.

In a general way, therefore, the amount of experience gained by the nurse is largest in the largest hospitals, but the difference is not so great as the difference between the size of the hospitals would lead us to expect.

4. The largest amount of instruction is given in some of the smaller hospitals, and the smallest amount in the smallest hospitals of all, while a medium amount of teaching is given in the largest schools.

5. The practice of obtaining a part of the training in each of different schools is growing fast and deserves to grow faster.

6. The money allowance given to pupil nurses is steadily decreasing as the preliminary period of training grows in favor.

NURSING ETHICS AND ETIQUETTE *

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THE object in lengthening the hospital course to three years is to give the pupil-nurse ample time to become thoroughly acquainted with laws governing the profession, and to acquire more professional knowl-

Lecture given to the pupil-nurses of Faxon Hospital.